

## CLAIMS

What is claimed is:

1. In a system comprising a first and a second modem pool, each modem pool including a plurality of modems, where each modem in one of said modem pools is  
5 paired with a corresponding modem in the other of said modem pools, a method for controlling aggregate throughput comprising:

initializing each of said modems at an outbound throughput and an inbound throughput, wherein said outbound and inbound throughputs of at least one of said modems are determined independently from one another;

10 determining an aggregate outbound throughput for each of said modem pools; and

for each of said modem pools whose aggregate outbound throughput exceeds an associated optimal aggregate throughput, reducing the outbound throughput of any of said modems until said aggregate outbound throughput equals said optimal aggregate  
15 throughput.

2. A method according to claim 1 wherein said initializing step comprises initializing any of said modems asymmetrically.

20 3. A method according to claim 1 wherein said reducing step comprises reducing where said optimal aggregate throughput equals the lesser of said aggregate outbound throughputs.

4. A method according to claim 1 wherein said reducing step comprises using at least a portion of the outbound throughput of any of said modems for error correction.

5. A method according to claim 1 wherein said reducing step comprises  
5 reducing the physical bit rate of any of said modems.

6. A method according to claim 1 wherein said reducing step comprises transmitting junk bits in at least a portion of the outbound throughput of any of said modems.

10 7. In a system comprising a first and a second modem pool, each modem pool including a plurality of asymmetric modems, where each modem in one of said modem pools is paired with a corresponding modem in the other of said modem pools, a method for controlling aggregate throughput comprising:

15 initializing each of said asymmetric modems at an outbound throughput and an inbound throughput, said outbound and inbound throughputs being determined independently from one another;

determining an aggregate outbound throughput for each of said modem pools; and

20 reducing the outbound throughput of any of said asymmetric modems in said first modem pool until said aggregate outbound throughput of said first modem pool equals said aggregate outbound throughput of said second modem pool.

8. A method according to claim 7 wherein said reducing step comprises using at least a portion of the outbound throughput of any of said modems for error correction.

9. A method according to claim 7 wherein said reducing step comprises  
5 reducing the physical bit rate of any of said modems.

10. A method according to claim 7 wherein said reducing step comprises transmitting junk bits in at least a portion of the outbound throughput of any of said modems.

11. A modem pool communications system incorporating aggregate throughput control, the system comprising:

15 a first and a second modem pool, wherein each of said modem pools includes a plurality of modems, wherein each of said modems in one of said modem pools is paired with a corresponding one of said modems in the other of said modem pools, wherein each of said modems is operative to initialize at an outbound throughput and an inbound throughput, and wherein at least one of said modems is operative to determine said outbound and inbound throughputs determined independently from one another; and

20 means for controlling aggregate throughput, said means operative to:

determine an aggregate outbound throughput for each of said modem pools; and

for each of said modem pools whose aggregate outbound throughput exceeds an associated optimal aggregate throughput, reduce the outbound throughput of

any of said modems until said aggregate outbound throughput equals said optimal aggregate throughput.

12. A system according to claim 11 wherein any of said modems is operative to initialize asymmetrically.

13. A system according to claim 11 wherein said means for controlling aggregate throughput is operative to reduce where said optimal aggregate throughput equals the lesser of said aggregate outbound throughputs.

14. A system according to claim 11 wherein said means for controlling aggregate throughput is operative to reduce by using at least a portion of the outbound throughput of any of said modems for error correction.

15. A system according to claim 11 wherein said means for controlling aggregate throughput is operative to reduce by reducing the physical bit rate of any of said modems.

16. A system according to claim 11 wherein said means for controlling aggregate throughput is operative to reduce by transmitting junk bits in at least a portion of the outbound throughput of any of said modems.

17. A modem pool communications system incorporating aggregate throughput control, the system comprising:

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a first and a second modem pool, wherein each of said modem pools includes a plurality of asymmetric modems, wherein each of said modems in one of said modem pools is paired with a corresponding one of said modems in the other of said modem pools, wherein each of said modems is operative to initialize at an outbound throughput and an inbound throughput, and wherein at least one of said modems is operative to determine said outbound and inbound throughputs determined independently from one another; and

means for controlling aggregate throughput, said means operative to:

determine an aggregate outbound throughput for each of said modem

10 pools; and

reduce the outbound throughput of any of said asymmetric modems in said first modem pool until said aggregate outbound throughput of said first modem pool equals said aggregate outbound throughput of said second modem pool.

15 18. A system according to claim 17 wherein said means for controlling aggregate throughput is operative to reduce by using at least a portion of the outbound throughput of any of said modems for error correction.

19. A system according to claim 17 wherein said means for controlling  
20 aggregate throughput is operative to reduce by reducing the physical bit rate of any of said modems.

20. A system according to claim 17 wherein said means for controlling aggregate throughput is operative to reduce by transmitting junk bits in at least a portion of the outbound throughput of any of said modems.

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